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ABSTRACT

A total of 158 children from seven kindergarten classes participated in a study that compared the effectiveness of a context emphasis approach for teaching sight words with an approach that emphasized the distinctive features of the words presented alone. Within classes, the students were assigned in equal numbers to the treatment conditions: context and distinctive features. For instructional purposes, the children were divided into groups of from four to six members. Each time a group was seen, five words drawn from a list of 40 to be taught were presented using the assigned method. The study was conducted over 23 instructional days with tests to measure delayed recall administered on the tenth day and tests measuring long-term retention given on the twenty-second or twenty-third days. The results showed that a method of instruction that focused the learner's attention on the structural characteristics of the words alone accelerated the rate at which words were learned; however, the ability to read words in text did not appear to be guaranteed by this method. The findings suggested that a distinctive features method of instruction might prove profitable for teaching students who have acquired some reading competency and that a slower rate of sight word acquisition might be justifiable for prereaders if they are acquiring additional skills needed for contextual reading conjunctively. (FL)

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Context Versus Isolation Methods of Word Instruction: Efficiency Examined by Paralleling Assessment Modes

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Introduction

Initiating a child to reading instruction by first teaching him a core of sight words has long been considered desirable practice by many reading authorities (Betts, 1946; Durkin, 1972; Hood, 1977; Smith, 1963; Spache and Spache, 1973). A commonly accepted reason for advocating this training is so that the child's first encounter with reading material can be devoted to a search for meaning. It is also felt that the acquisition of a core of sight words will subsequently provide the child with a base from which to deduce graphophonic rules (Cooper and McGuire, 1970 - 1971; Duffy and Sherman, 1972; Gray, 1960).

Some debate exists with regard to the most efficient technique for teaching sight words. Based on research findings supporting the idea that the more meaningful a word is to the student the easier it is to learn (Gray and Holmes, 1938; Hildreth, 1935; Paivio, 1965), some theorists recommend that the first new words be introduced in conjunction with pictures or within appropriate sentences (hence known as the context emphasis approach) (Bond and Tinker, 1973; Durkin, 1972; Hall, 1970; Harris and Sipay, 1975; Lee and Allen, 1963). The use of pictures is said to "lend vividness of meaning" to words introduced for study (Harris

and Sipay, 1975, p. 354). In a similar vein, introducing words in sentences (oral and written) is said to clarify the meaning and usage of words to be learned (Bond and Tinker, 1973). The view that initial word learning and retention are benefited by procedures which emphasize meaning is proposed in numerous texts on reading methodology. For example, Wilson and Hall (1972) state:

> By stressing the communication value of word study teachers can help children learn sight words more readily (p. 138).

A similiar view is expressed by Ehri (1978).

> Automatic recognition of a word from its graphic form is probably a consequence of extensive experience seeing that word in context and building up a complete linguistic identity around it (p. 15).

For purposes of developing a core of sightwords, many proponents of the context approach give secondary if not cursory support to techniques that focus on word configuration, length and other visual characteristics (Durkin, 1972; Ekwall, 1978). Indeed, some extremists suggest that graphophonic cues are best learned intuitively as words are repeatedly encountered in context (Goodman, 1967).

Critics of the context approach argue that meaning cues are superfluous since words taught as sight words are more than likely already in the child's listening-speaking vocabulary (Spache and

Spache, 1973; Kibby, 1977). They further contend that introducing words with pictures or in phrases can actually inhibit word learning and retention by diverting attention away from the printed word (Samuels, 1967). Operating on the premise that associating meaning with a written word first requires its recognition, this second group of theorists suggests an instructional procedure which calls for the introduction of words in isolation and which directs attention on such distinctive features of words as shape, length, initial, middle and ending word parts, letter patterns, and the like as words are being taught (hence known as the distinctive features approach) (Gibson and Levin, 1975; Samuels, 1970 (a), 1970 (b)). Indeed the consensus among this second group of theorists seems to be that an emphasis on distinctive features will not only facilitate learning in terms of time (Kibby, 1977) but will also make the child aware of the many invariant features available and useful for further word learning (Gibson and Levin, 1975; Samuels, 1967; Smith, 1971).

The study reported in this paper compared the effectiveness of a context emphasis approach for teaching sight words with an approach which emphasizes the distinctive visual characteristics of the words presented alone. The investigators adverse reaction to defects apparent in previous studies comparing such approaches motivated the use of a naturalistic setting for implementation of the study as well as the use of paralleling assessment modes for evaluative purposes.

Background and Rationale

Several studies have assessed the effects of picture cues, phrase cues and sentence cues on children's initial word learning.

Singer, Samuels and Spiroff (1973-1974) compared the effects of teaching beginning readers words in one of four conditions: alone, with appropriate pictures, within the context of a standard English sentence, or in a sentence-picture combination. The four stimulus words were written in an artificial orthography and a trial to criterion methodology was used to assess the most efficient method of presentation. Learning of words was more easily accomplished when words were presented alone. A decrease in subjects' word learning success was noted as the cues paired with the stimulus words "changed from picture to sentence and increased from sentence to sentence plus picture." (p. 593)

The investigators concluded that the introduction of picture and/or sentence cues diffuses the amount of attention which the learner would otherwise give to the word presented alone thereby causing a decrease in word learning efficiency.

In a study by Hartley (1970) first grade subjects were taught to read words presented by one of three methods: word alone; word together with picture; or word in the context of an orally delivered sentence. Words taught by each method were presented in lists which maximized their visual similarity (ken, men; row, snow) and in lists in which such visual similarity was minimized. (ken, snow). Barring list type, no significant differences in learning and 24 hour retention of words were found among any of

the three methods. However, some interactions between list type and method were observed. The word alone method was found to facilitate learning and retention of similar word lists and depress such performances on dissimilar lists.

With respect to dissimilar lists, the oral context method produced better learning and retention of words than the picture method and the word alone method respectively. Hartley's findings led her to caution practitioners to "consider the combination of list type and cue used" for optimizing the learning situation. (p. 119)

In an experiment by Ehri (1976) context free words (nouns and adjectives) and context dependent words (past tense verbs, prepositions and functors) were taught to pre- and beginning readers with or without oral context cues. In a paired associate task subjects in either condition were asked to respond orally to five nonsense figures representing the words. Context free words were learned at a faster rate than context dependent words. Providing a defining context cue however, did not facilitate learning of words of either type.

While the contradictory results of the above reviewed studies may be partially due to subtle variations in experimental methodology, (see Arlin, Scott & Webster, 1979, for a cogent discussion of this issue) several problems which challenge external validity preclude serious consideration of any one study's results. First, in all the studies reported above, target words have been taught and tested over the span of one day so that only short term effects have been determined. Second, the target words in

many of these experiments have usually represented a biased sample of words normally taught to first graders. Common functors and polysyllabic words typically found in first grade reading materials have seldom been included on the target list. Third, in some of the studies, words have been written in artificial script, clearly divorcing the task from what is found in the classroom. Finally, in all these experiments, the instructional procedure utilized suggests that beginning reading instruction involves little more than stimulus-response learning. Procedures which focus exclusively on the learning of words and fail to provide for meeting those words in a meaningful reading task bear little approximation to what is recommended for the classroom.

An attempt to avoid some of these limitations can be observed in a naturalistic study performed by Mattola (1951; reported in Petty, Herold and Stoll, 1968). Over a six week period, 279 children from 10 first grade classes were taught unknown words from their regular texts according to their predetermined learning rate. Following the standardized procedures designed by the investigator, five teachers taught words in isolation while the other five taught them in phrases. Reading of stories containing the words proceeded as usual despite the treatment applied. Although differences were non-significant, groups taught words in isolation showed a tendency to excel over peers taught words in phrases. Unfortunately, the phrase treatment did present some target words in combination with other unreadable words. This condition may have posed unnecessary interference to children learning words in phrases.

In an experiment conducted over four weeks of remedial instruction in a summer reading program, Kibby (1977) compared two groups of disabled readers on their ability to recall words taught by a context emphasis approach or by a method in which context cues were minimized. Both groups were directed to attend to the distinctive visual characteristics of words. As in the Mattola study, both groups encountered the words taught in the daily reading of meaningful material. Kibby found no significant difference in the number of words learned by the two groups. Addition of context cues did result in a significant increase in instructional time, however. Kibby concluded that presentation of context cues to disabled readers who already had sufficient knowledge of the meaning of the target word was of questionable value. The benefits of emphasizing context cues in the course of teaching sight words did not justify the expense in terms of time.

While Mattola and Kibby's naturalistic studies suggest that context cues may be inhibiting to the word learning process, a limitation of these studies, as with the laboratory studies previously reviewed, is the lack of consideration which has been given to mode of assessing word learning attributable to instructional technique. In comparing word in context and word alone treatments, for example, conclusions pertaining to efficiency have been based on children's performance on isolation mode tests. Yet isolation mode tests might have indeed favored word alone instructional techniques.

Since the obvious objective of sight word instruction is the fluent reading of words presented in text, assessment of words

learned via a contextual mode in addition to an isolation mode would seem to be of significant interest.

Purpose and Description of the Study

The purpose of this study was to evaluate in a natural setting two procedures for teaching sight words. The question formulated for this study pertained to the efficiency of the two procedures:

> Is there a difference in children's retention of sight words when they are instructed by a method emphasizing context cues as opposed to a method emphasizing distinctive word cues?

So that mode of assessment favored neither the context procedure nor the distinctive features procedure, retention was measured on tests requiring recognition of words in a) isolation (paralleling aspect of the distinctive features treatment), and b) in sentences (parelleling aspects of the context treatment).

Definition of Terms

The following terms refer to the teaching procedures being appraised:

Context Method: The procedure which stresses the "semantic content" of the word being taught (Hartley, 1970). In this study the context method emphasized the semantic content of the word by requiring the teacher to (a) introduce the word in oral discussion; (b) display a written sentence containing the word and read it to

the students; and (c) to show a picture of the word whenever possible.

Distinctive Features Method: The procedure which emphasizes the distinctive graphophonic characteristics of the word being taught. In this study the distinctive features method required the teacher to introduce each new word in isolation and call attention to its shape, length, individual letter features and letter patterns.

Of considerable interest in this study were the effects of the two teaching procedures on the following dependent variables.

Delayed Retention: The total number of words recalled as a result of instruction as measured on two posttest given the tenth day of the experiment.

Long Term Retention: The total number of words recalled as a result of instruction as measured on two posttests administered on the twenty-first and twenty-second day of the study.

Preparation for the Study

Over a period of several months prior to initiating the study the investigator occasionally met with small groups of 3 to 6 kindergarteners in order to develop the various materials, and procedures to be used for experimental instruction and data collection. Specifically the investigator hoped to design:

1. two standardized procedures for teaching sight words which, in addition to requiring the same instructional time, were naturalistic, motivationally appealing and

appropriately geared for the beginning reader;

2. suitable materials with which to present words by each instructional method; and
3. effective and efficient procedures for gathering data (during and) following the experiment's instructional phase.

By the beginning of April 1978 the various materials and procedures to be used for the study approached their final form. A small informal pilot study done with two groups of 5 children confirmed the feasibility of their use. A description of subjects, experimental instructors, materials and procedures utilized in the actual study follows.

Subjects

Two hundred and one children from seven kindergarten classrooms from a suburban Buffalo elementary school were made available for the study in May, 1978. From this group 158 children were selected according to the following criteria:

1. an ability to learn and retain at least two words presented on the visual components of the Word Learning Task (WLT) (Kibby, 1975) and,
2. an inability to recognize at least 35 of the 40 words to be taught over the two week instructional phase of the experiment.

Assisting in the selection process were five graduate students from the S.U.N.Y. at Buffalo Educational Division. The assistants were trained in administering the WLT and the sight word pre-test.

Selection procedures were carried out three school days prior to the first day of the experiment. Within classes, the 158 children were then randomly assigned to the experimental conditions: context and distinctive features.

The nature of the study required that subjects be present throughout the nine days of the study's instructional phase. Table 1 shows the distribution of children by sex in each condition after random assignment at the onset and on the culminating day of the study.

Insert Table 1 about here

Smaller n's shown on the final days reflect attrition due to absenteeism.

Experimental Instructors

Eleven people were trained as experimental instructors. Certain common characteristics were shared by people participating in the training:

1. all were graduate students at S.U.N.Y. at Buffalo (Educational Division)
2. all had experience in teaching children to read
3. all had taken at least one semester of courses leading to a Master of Education with a specialization in Reading.

By design, only seven of the eleven trainees were needed as regular instructors. The seven chosen were those who could commit themselves to teaching for the first nine days of the experiment's

instructional phase. The additional four people were utilized as substitutes in the event one of the instructors could not be present on any one day. Barring two absences of this nature, the same experimental instructor taught the same four groups during each instructional session, two groups by one and two groups by the other method. All persons trained as experimental instructors were involved in the data collection tasks.

Materials

The Target Word List[1]

The list of forty words to be taught during the course of the study was taken from the first four preprimers of the Holt Basic Reading System (Everts, Hunt, and Weiss, 1975). Color words and number words were not included on the list since subjects' exposure to them in graphic form prior to the experiment was probable. Also omitted from the target list were one letter words (I, a).

The authors of the Holt series indicate that all the words in the preprimers (and consequently all the words on the target list) have a high probability of being in the listening/speaking vocabulary of children beginning to read. Like the vocabulary found in most beginning reading materials, the target words vary in form class as well as in the number of syllabic units. For presentation purposes, the words on the target list were grouped into eight sets of five--each set to be introduced on a specific day of the experiment's instructional phase.[2] Each set was comprised of words differing in length and shape. Each set contained no more than two words which could not be illustrated.

Instructional Materials[3]

The materials designed for carrying out each instructional procedure allowed for the standardized presentation of words by the seven experimental instructors. The context procedure required that each word be introduced with a picture cue and language cues (oral and written). A picture cue consisted of a simple line drawing illustrating an object or situation identified by the target word. Because of the realistic nature of the target list, twelve of the words (i.e. functors, pronouns, etc.) could not be feasibly introduced with pictures. Each picture cue was mounted on a 5" x 8" oaktag card on the bottom of which was printed the related word. In cases in which a word could not be illustrated, it was printed alone.

An oral language cue consisted of one or two sentences which clarified the meaning and usage of a target word. These were typed on the back of the picture word card to be read orally by the experimental teacher as the picture word was presented.

The written cue consisted of a two to six word sentence printed on a 5" x 18" oaktag strip. The sentence was made up of previously taught words plus the new word underlined in red.[4] The context procedure also necessitated one set of 5" x 8" word cards upon which the target words were printed alone.

The distinctive features procedure required three sets of 5" x 8" cards on which the target words were printed alone. A felt tip pen was included with this set of materials for the purpose of emphasizing the outstanding features of each word taught by this method.

On each of the eight instructional days when new words were introduced, the experimental instructors each received a packet containing the standardized material to be used for teaching the five new words for the day by each instructional procedure. All the card materials described above were systematically displayed on a 24" x 36" canvas board pocket chart in line with the guidelines prepared for teaching by each procedure.

As part of the general instruction for both experimental groups, two sets of reading materials were developed--one to be used following the fourth instructional session and the other to be used after the ninth instructional session. Each of these sets consisted of stories comprised of the words taught up to the point at which the reading material was introduced. Thus, there were twenty words included in the stories following the fourth session while forty words appeared in stories following the ninth session.

Test Materials

Two sets of test materials were constructed. One to be used to measure sight word delayed retention and the other to measure sight word long term retention. Each set consisted of a test of forty words shown in isolation and in sentences. For the isolation test each word was printed alone on a 2" x 4" card. For the sentence test, 18 short sentences, three to six words in length, were formed from the words taught. Each sentence was printed on a 2" x 8" card. During testing, cards were shown individually and in random order to the subjects, and responses were recorded on appropriate record sheets.

Procedures

For instructional purposes, the 79 subjects in each experimental condition were divided into groups of four to six children. For eight out of nine teaching days, each small group was taken to an isolated teaching area. As a mode of control, the order in which each of the four groups was seen for instruction was counterbalanced through the eight teaching sessions. Each time a group was seen, the five words for the day were taught by the assigned method.

Overview of Methods of Presentation[5]

Each method of presentation consisted of three segments conducted daily for eight out of nine days comprising the experiment's instructional phase (Days 1 through 4; and Days 6 through 9). During the first and second segments, five new words were introduced and reviewed within a small group setting. During the third segment, each child was seen alone for an additional review. No new words were introduced on the fifth day of the instructional phase, but the subjects in both treatment groups read stories under the direction of their experimental instructors. Selections read on this day were controlled for the 20 words taught on the previous four days. Following word instruction of the ninth day, subjects in both treatment groups read another group of stories. Selections read on this day were controlled for the 40 words previously taught.

Segment 1. Children introduced to words by the context method first heard each word in spoken discourse. They were then

asked to look at each new word and the picture identifying it (when a picture was available). As the identity of each new word was revealed, the children were told to look at a sentence on the pocket chart in which the word was underlined. The instructor then read the sentence to the children pointing out the new word.

Children introduced to words by the distinctive features approach received no context cues. As the words were shown on a card, they were simply told the word. Then as the presentation proceeded, the various visual features of each word were pointed out according to outlined format. First, the group's attention was focussed on the lengths of the words in relation to each other. With the five new words before them on the pocket chart, individual children in the group were asked to point to the longest or the shortest word presented that day. As a child pointed to one of these words it was read to the group by the experimental instructor. Second the instructor focussed the group's attention on the beginning and ending letters of each new word displayed on the chart. Third, any distinctive patterns within the words were emphasized. Such patterns as in the ir in "girl" or the oo in "book" were pointed out by the instructor.[6] The instructor said the associated sound of each pattern and then quickly repeated it in the word to be learned (i.e., "ir--girl" or "oo--book"). Finally, the group's attention was focussed on the shape of each word. Upon saying each word displayed on the pocket chart, the instructor outlined its shape with a felt tip pen. At the same time, the instructor verbally called attention to the ascending and descending characteristics of the word.

For control purposes, the same order of word presentation was maintained in the two procedures.

Segment 2. During the second segment of each presentation method the five new words were reviewed. The review consisted of a matching task and a recognition task. Children taught by the context procedure were asked to place each new word presented on a card on top of its match appearing in a sentence in the pocket chart. They were then asked to read the sentence containing the word. If the children demonstrated any difficulties, the instructor aided them. Upon completion of this task, the five new words were read in mixed order by the instructor, and individual children removed the corresponding word cards from the pocket chart.

In a manner paralleling the context method, children taught by the distinctive features approach were asked to match each new word presented on a card with its match in isolation on the pocket chart. Later, the instructor named the words randomly and individual children removed them from the pocket chart. At the conclusion of segment two, children were dismissed to await a brief private conference with the instructor (segment 3).

Segment 3. The final segment of each instructional day consisted of a recall task conducted privately with each child. At this time, the five words introduced during the group sessions were shown to each child in random order. Also reviewed at this time were the words taught up to two previous instructional sessions. As each word was shown on a card, the child was asked to read the word. When a correct response was given, the instructor reinforced positively by saying "good" or "that's right." When a no response or a substitution error response was made, the

instructor corrected the child by saying "(No) the word is_____."[7]

Additional activities. As mentioned previously, five new words per day were taught on eight out of ten days of the experiment's instructional phase (Days 1-4 and 6-9). On the fifth and ninth day, the small groups met to receive short but standardized directed reading lessons from their instructors. Selections used for the directed reading activities were adapted from the Holt Basic Reading System--Levels I-IV (Everts, Hunt, and Weiss, 1973) and contained only the words taught to date. Thus each child, regardless of treatment, was given two opportunities to apply his newly learned words in a natural reading task.

For the directed reading activities, children were asked to read silently the selections provided in order to answer questions about them. The instructor asked questions intermittently as the children progressed through the story so as to direct their attention to meaning. Oral rereading of the story was required to provide a read along review of words introduced to date.

The two directed reading activities were the sole exposure to contextual reading for the distinctive features group during the course of the study, but only an additional encounter for the context group. This situation is not viewed as confounding the outcomes of the study for two reasons. First, the study is a naturalistic one. Considering this framework, it is the emphasis which should be placed on contextual and meaning cues while teaching sight vocabulary that is the question to which this study is directed. Second, all natural approaches to teaching sight vocabulary have meaningful reading as their ultimate goal.

Consequently, an elimination of the directed reading activity from the confines of the study would have undermined its external validity.

Administration of Retention Measures

On the tenth day of the experimental period, children in each treatment group were once again seen individually. Each child was taken at random from his classroom to a quiet testing area. At this time, the number of words learned by the child over the previous nine days was assessed in two separate modes: (a) in isolation and (b) in sentences. So that order effects could be eliminated from either test's score, administration of the isolation and sentence measures was counterbalanced among subjects in each condition.

For the isolation measure, children were shown each of the forty words individually in random order and a tally of the correct responses was made.

For the sentence measure, children were shown 18 sentences, each comprised of two to six words. The Gray marking system (1967) was used by the examiner to note the errors made by the children as they read each sentence orally. For purposes of this study, only the first occurrence of a word on the sentence test was used in the tally of the number of words learned.

On the 12th or 13th day following the period of instruction and practice (the 22nd or 23rd day of the experiment) the isolation and sentence measures were once again given to each child so that long term retention effects could be assessed.[8]

The following list reviews the sequence of activities provided

for the subjects during the experimental period.

Days 1-4	. Group instruction and review of new sight vocabulary
	. Individually administered review task
Day 5	. Directed group reading of selection controlled for previously taught words
Days 6-8	. Group instruction and review of new sight vocabulary
	. Individually administered review task
Day 9	. Group instruction and review of new sight vocabulary
	. Individually administered review task
	. Directed group reading of selection controlled for previously taught words
Day 10	. Administration of isolation measure and sentence measure
Days 22-23	. Administration of isolation measure and sentence measure

Analysis of the Data

The data used to assess delayed and long term retention were analyzed separately each time using a 2 (sex) by 2 (method) fixed effects analysis of variance model. Although sex was not a variable of significant interest, it was included in the initial analyses to detect its possible interaction with treatment.

The relationship between method of instruction and mode of assessment being of specific interest in this study, a separate 2 (method) by 2 (mode of assessment) multivariate analysis of

variance for repeated measures was applied to each retention data set.

Findings and Discussion

Delayed Retention

The mean number of words recognized on each delayed retention measure by children in each treatment group is presented in Table 2.

Insert Table 2 about here

The results of the multivariate and univariate analyses of variance are presented in Table 3.

Insert Table 3 about here

As can be seen in Table 3, the multivariate analysis of variance revealed that mean differences due to sex and the sex by method interaction were not significant. Method of instruction produced the only significant source of variation on the delayed retention measures ($p < .001$). Because performances on the isolation and sentence measures of delayed retention were highly correlated (.93) and their univariate F statistics were non-significant, it was speculated that the sentence measure might be registering effects of method other than words learned in favor of the context method group and that this might be producing depressing

effects in the univariate analyses. These findings suggested the feasibility of an additional analysis which would examine and clarify the relationship between method of instruction and mode of assessment.

The average difference between the two assessment measures was 2.6 words for the distinctive features method group and .23 words for the context method group. An analysis of the delayed retention data using a 2 (method) by 2 (mode of assessment) multiple analysis of variance for repeated measures revealed a significant interaction of method of instruction and mode of assessment (F (1, 113) = 12.30, $p < .0007$).

This interaction suggests that the superior performance of the distinctive features method group on the isolation measure of delayed retention is partially attributable to the mode of assessment utilized. The findings suggest that children who learn by a word alone method possess an advantage over children who learn words by a sentence method when assessment of words learned requires recognition of words in isolation. This finding is of particular interest for it raises question relative to assessment procedures employed in past studies comparing word alone with word in context instructional techniques.

An observation of further interest pertains to each group's performance on the sentence test in relation to performance on the isolation test. The previous analysis suggested that children taught by the distinctive features method. The mean difference between treatment groups in the number of words read on the isolation test was 3.19 words. On the other hand, when reading words

within the context of real sentences, the context method group and the distinctive features method group did not differ significantly in the number of words correctly read. The mean difference in the number of words read on the sentence test was .76 words. Thus in comparison to the context method group the distinctive features method group read proportionally fewer words in sentences than they were able to read in isolation. Indeed, within sentences, the distinctive features group read only 72.7% of the words correspondingly read in isolation while the context method group read 98.8%. This observation, though not immediately explainable, raises questions concerning the differential influence of the two instructional procedures on children's initial strategic dealings with text. Specifically, the following questions are raised: (a) Did the distinctive features method group find surrounding context distracting rather than facilitative to the process of recognizing words?; and (b) Did the distinctive features method group react to words in sentences on a word-by-word basis, neglecting the cue value of syntax and meaning? Positive findings on this score would support Goodman's contextual hypothesis and would indicate the desirability of initial word learning procedures emphasizing context. The findings pertaining to delayed retention clearly indicate the importance of considering mode of assessment in relation to treatment employed. In addition, they raise a question with respect to the validity of isolation tests when reading in text is the desired outcome of instruction.

Long Term Retention

For children in each treatment, sight word long term retention

was assessed approximately two weeks following the experiment's instructional phase. The means and standard deviations for these data are presented in Table 3.

Insert Table 4 about here

The various analyses applied to these data revealed no significant source of variation on and between the two long term retention measures. Boys and girls taught by the distinctive features method recalled essentially the same number of words as boys and girls taught by the context method on both measures of long term retention. The interaction of method of instruction with mode of assessment was also non-significant though trends similar to those exhibited on the delayed retention measures were apparent. Non-significant findings for delayed retention suggest that passage of time without intervening practice between the delayed and long term retention testings dissipated the differential between the two treatments for reading words in text.

Limitations

Previous discussion suggested an effort to formulate instructional procedures requiring essentially the same instructional time. Intention to do so was motivated by the findings of Carrol and Spearritt (1967) demonstrating the significance of the time variable in determining amount of learning attributable to method. Informal observation during instructional sessions revealed the

occurrence of occasional though minor variations in the timing of the two methods. These variations seemed to stem mainly from individual differences in the attentive behavior of certain children in various groups and the consequent efforts of respective experimental instructors to acquire and maintain full group attention. The differences in the attentive behavior of children was not deemed to be the consequence of the motivational assets or liabilities of either method but rather of a limitation commonly associated with experiments conducted within naturalistic settings.

Additional limitations of this study pertained to the generalizability of the findings. First, each teaching procedure assessed in this study had as its instructional goal the development of a core of sight words high in frequency of usage and without doubt in the listening speaking repertoir of the subjects. Consequently, the findings with regard to procedural effectiveness are not generalizable to a reading situation in which children are required to learn unfamiliar words - as might be the case in a science lesson, for example. Second, the study observed word learning during the initial two week period of reading instruction. While in comparison to most experimental undertakings in initial word learning a two week period of time would seem substantial, it must be realized that at this stage of reading instruction children have not acquired sufficient skill to enable them to engage in a great deal of meaningful reading. Consequently, generalizations regarding the effects of either procedure on word learning at points in time when skill development allows for opportunity to read widely cannot be made.

Summary and Implications

Previous word learning studies have invariably employed isolation modes of assessment for determining the relative efficiency of word in isolation and word in context instructional techniques. Data from this study suggested that isolation mode tests yield inflated performance scores for children who are taught by isolation methods of instruction. When children's performance was judged on sentence mode tests the context method and the word alone method of instruction were found to be equally efficient. The present study has thus raised a question about the relevance of isolation mode tests. Specifically, should not word learning in future studies be assessed in context since the objective of initial sight word instruction is the efficient reading of contextual material? The need for research that addresses this question either through replication of the present study or through other modes of inquiry is apparent.

Additional questions stemming from this research pertain to the effect of such instructional techniques on children's developing attitudes toward reading as well as their developing perceptions of the reading process. For example, do such methods of instruction influence children's initial strategic dealings with text, and if so, are children's attitudes toward reading affected by such instructional techniques? Research efforts directed toward answering such questions would be of significant value.

For the practitioner, the present study would seem to suggest that the decision to utilize a context method, a word alone method or a combination of both methods rests on the needs of the learner.

The findings show that a method that focusses the learner's attention on the structural characteristics of the words alone accelerates the rate at which words are learned. However, the ability to read words in text does not appear to be guaranteed by such a method of instruction. The practitioner must then take care to see that the learner develops the ability to effectively utilize context as a means of recognizing words in text. A method such as the distinctive features method utilized in this study may thus prove profitable for teaching children who have acquired some reading competency and who need to expand their stock of sight words for a particular reading assignment. For the prereader, however, a slower rate of sight word acquisition may be justifiable if additional skills needed for contextual reading are being acquired conjunctively.

Footnotes

[1]A listing of the target words will be found in Appendix A.

[2]The practicality of teaching five words per day over an extended period of time has been demonstrated in several previous studies (Kibby 1977, Mattola 1951, Wiley 1928) and was also determined through the investigators own pilot work.

[3]See Appendix B for a descriptive display of the various instructional materials discussed in this section.

[4]Written cues used on the first two days of instruction did contain three words which were not on the target list. (See, a, and I; see Appendix B.) Since these words were introduced to all subjects in connection with the WLT administration, they were considered previously taught.

[5]The standardized presentations for the context and distinctive features procedures may be found in Appendix C.

[6]The instructors were told which patterns to note as they taught. These patterns are presented in Appendix B.

[7]During segment 3, responses made by children were recorded and classified as (1) correct, (2) substitution, or (3) no response. To determine possible differences in each treatment group's word learning strategies separate analyses were made of each group's response type tendencies. Substitution errors were specifically analyzed to identify differences in featural attention of children in each treatment group. Differences in learning strategies of

the two groups are dealt with in the dissertation by Ceprano (1979).

[8]Various end of the year school functions precluded planned administration of the isolation and sentence measures to all subjects on one day. Randomized administration of the two measures to individuals in each condition negated confounding effects of the two day test period, however.

References

Arlin, M., Scott, M., & Webster, J. The effects of pictures on rate of learning sight words. Reading Research Quarterly, 1978-1979, 14, 645-660.

Betts, E. A. Foundations of reading instruction. New York: American Book Co., 1946.

Bond, G., & Tinker, M. Reading difficulties: Their diagnosis and correction. New York: Appleton Century Crofts, 1973.

Carroll, J. B., & Spearritt, D. A. A study of a model of school learning. Monograph No. 4. Harvard University Research and Development Center on Educational Differences, Cambridge, Mass., 1967.

Ceprano, M.A. The effects of two instructional procedures on featural attention and word learning of children beginning to read. Unpublished doctoral dissertation, State University of New York at Buffalo, 1979.

Cooper, J. L., & McGuire, M. L. The Croft Inservice reading program. New London: Croft Educational Services, 1970-1971.

Duffy, G. G., & Sherman, G. B. Systematic reading instruction. New York: Harper & Row, 1972.

Durkin, D. Teaching young children to read. Boston: Allyn and Bacon, 1972.

Eckwall, E. E. Diagnosis and remediation of the disabled reader. Boston: Allyn and Bacon, 1978.

Ehri, L. C. Word learning in beginning readers and pre readers: Effects of form class and defining contexts. Journal of Educational Psychology, 1976, 68, 843-852.

Ehri, L. C. Beginning reading from a psycholinguistic perspective: Amalgamation of word identities. In L. C. Ehri, R. W. Barron, & J. M. Feldman (Eds.), The recognition of words. Newark, Delaware: International Reading Association, 1978, pp. 1-33.

Everts, E., Hunt, L. C., & Weiss, B. J. The Holt basic reading system. New York: Holt, Rinehart and Winston, 1975.

Finn, J. D. Multivariance: Univariate and multivariate analysis of variance, covariance and regression. Version 611, a Fortran IV Program. Ann Arbor, Michigan: National Education Resources, Inc., 1978.

Gibson, E. J., & Levin, H. The psychology of reading. Cambridge: The MIT Press, 1975.

Goodman, K. S. A linguistic study of cues and miscues in reading. Elementary School Journal, 1965, 45, 639-643.

Gray, W. S. Gray oral reading tests. Indianapolis: Bobbs Merrill Co., 1967.

Gray, W. S., & Holmes, E. The development of meaning vocabularies in reading. Chicago: University of Chicago, Publications of the Laboratory Schools, 1938.

Hall, M. Teaching reading as language experience. Columbus: Charles E. Merrill Publishing Co., 1970.

Harris, A. H., & Sipay, E. R. How to increase reading ability. New York: David McKay, 1975

Hartley, R. N. Effects of list types and cues on the learning of word lists. Reading Research Quarterly, 1970, 6, 97-121.

Hildreth, G. An individual case study in word recognition. The Elementary School Journal, 1935, 35, 607-619.

Hood, J. Sight words are not going out of style. The Reading Teacher, 1977, 30, 379-382.

Kibby, M. W. The effects of certain instructional conditions and response modes on initial word learning. Unpublished doctoral dissertation, University of Chicago, 1975.

Kibby, M. W. The effects of context emphasis on teaching sight vocabulary to disabled readers. Manuscript submitted for publication, 1977.

Lee, D. M., & Allen, R. V. Learning to read through experience. New York: Appleton-Century Crofts, 1963.

Mattola, M. D. The effects of teaching reading vocabulary by words in isolation and phrases in first grade (Doctoral dissertation, Boston University, 1951). In W. T. Petty, C. P. Herold, & E. Stoll (Eds.). The state of knowledge about the teaching of vocabulary. National Council of Teachers of English, 1968, p. 32-34.

Mattola, M. D. The effect of teaching reading vocabulary by words in isolation and phrases in the first grade. Unpublished doctoral dissertation, Boston University, 1951.

Paivio, A. Abstractness, imagery and meaningfulness in paired-associate learning. Journal of Verbal Learning and Verbal Behavior, 1965, 4, 32-38.

Samuels, S. J. Attentional process in reading: The effect of pictures on the acquisition of reading responses. Journal of Educational Psychology, 1967, 58, 338-342.

Samuels, S. J. Effects of pictures on learning to read comprehension and attitudes. Review of Educational Research, 1970(a), 40, 397-405. (a)

Samuels, S. J. Recognition of flashed words by children. Child Development, 1970(b), 41, 1089-1094. (b)

Singer, H., Samuels, S. J., & Spiroff, J. The effects of pictures and contextual condition on learning responses to printed words. Reading Research Quarterly, 1973-1974, 4, 555-567.

Smith, F. Understanding reading. New York: Holt, Rinehart & Winston, 1971.

Smith, N. B. Reading instruction for today's children. New Jersey: Prentice Hall Inc., 1963.

Spache, G. D., & Spache, E. D. Reading in the elementary school. Boston: Allyn and Bacon, 1973.

Wilson, R. M., & Hall, M. A. Reading and the elementary school child, theory and practice for teachers. New York: Van Nostrand Reinhold Co., 1972.

Table 1

Distribution of Subjects at the Onset and Culmination of the Study

		Day 1		Days 22/23	
	Treatment	Context	Distinctive Features	Context	Distinctive Features
Sex	Boys	40	43	34	29
	Girls	39	36	27	27
	Total	79	79	61	56

Table 2

Mean Number of Words Correctly Identified on the Sight Word Delayed Retention Tests by Children Taught by the Context and Distinctive Features Procedures

Treatment		Sight Word Delayed Retention Tests	
		Isolation	Sentences
Distinctive Features	Boys	13.44	11.20
	Girls	14.07	11.03
	TOTAL DF GROUP	13.75	11.12
Context	Boys	10.37	10.17
	Girls	10.81	10.55
	TOTAL C GROUP	10.59	10.36
Pooled Within Group SD		9.49	10.27

Table 3

Analysis of Variance Summary Table for Effects of Sex and Method on Delayed Retention Measures

Source of Variation	df	Multivariate F	Univariate F	
			Isolation	Sentences
Grand Mean	1			
Sex	1	.1579	.0549	.0012
Method	1	7.7555*	3.2133	.1691
Sex and Method	1	.1527	.0031	.0212
Within	113			
Total	117			

*$p < .001$

Table 4

Mean Number of Correctly Identified Words on the Sight Long Term Retention Tests by Children Taught by the Context and Distinctive Feature Procedures

Treatment		Sight Word Long Term Retention Tests	
		Isolation	Sentences
Distinctive Features	Boys	13.43	12.59
	Girls	13.44	11.96
	TOTAL DF GROUP	13.48	12.27
Context	Boys	10.41	10.03
	Girls	10.74	11.11
	TOTAL C GROUP	10.57	10.57
Pooled Within Group SD		9.95	11.23

APPENDIX A

THE TARGET WORD LIST

The Target Word List

Following is the list of words taught during the experiment's instructional phase. The words are listed in the order in which they were presented on the specified day of the study.

Day 1	1.	Ben[1]	Day 6	1.	cookies
	2.	Goldilocks		2.	go*
	3.	girl		3.	make
	4.	the*[2]		4.	pig
	5.	We*		5.	said*
Day 2	1.	read	Day 7	1.	it*
	2.	book		2.	she*
	3.	like		3.	people
	4.	is*		4.	home
	5.	someone		5.	trick
Day 3	1.	play	Day 8	1.	cookbook
	2.	Where*		2.	are*
	3.	mother		3.	come*
	4.	to*		4.	into
	5.	dog		5.	down
Day 4	1.	little	Day 9	1.	good-by
	2.	bear		2.	Who*
	3.	big		3.	up
	4.	in		4.	open
	5.	and*		5.	here*

[1]Underlined letters are patterns suggested for emphasis as part of the DF presentation method. Letter patterns were not underlined on word cards.

[2]The C method required that words be illustrated with a picture whenever possible. Asterisks indicate words which were not easily amenable to such cueing and therefore presented without pictures.

APPENDIX B

SAMPLES OF VARIOUS INSTRUCTIONAL MATERIALS

Written Cues

Following is the list of 40 written sentence cues used to introduce words to children assigned to the Context Method. Each cue is made up of previously known words and the new word which is underlined. The written cues are listed in the order presented on the specified day of the study.

Day 1	1.	See* Ben.
	2.	See Goldilocks.
	3.	See a girl.
	4.	See the girl.
	5.	We see the girl.
Day 2	1.	See the girl read.
	2.	Read the book.
	3.	We like the book.
	4.	Goldilocks is a girl.
	5.	I see someone.
Day 3	1.	We play.
	2.	Where is Ben.
	3.	Where is mother.
	4.	We like to play.
	5.	See the dog.
Day 4	1.	The boy is little.
	2.	See the bear.
	3.	The bear is big.
	4.	The dog is in.
	5.	The boy and girl play.

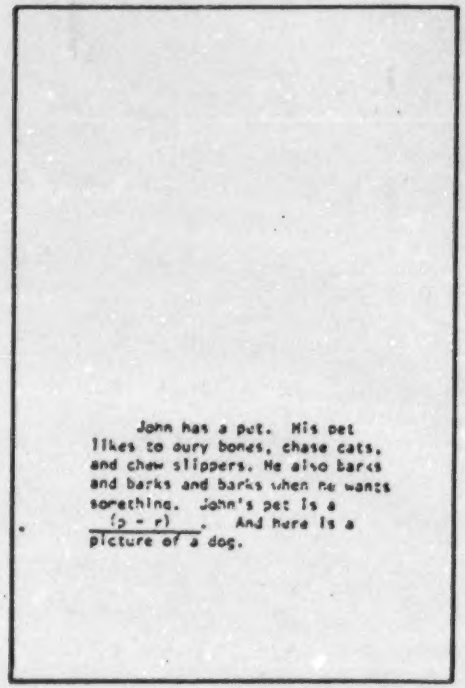
Day 6	1.	I like cookies.
	2.	See the dog go.
	3.	I make cookies.
	4.	See the pig.
	5.	Ben said, see the pig.
Day 7	1.	We like it.
	2.	Where is she.
	3.	I see people.
	4.	We go home.
	5.	I play a trick.
Day 8	1.	I read a cookbook.
	2.	We are little.
	3.	I like to come.
	4.	Come into the house.*
	5.	Come down.
Day 9	1.	The boy said, good-by.
	2.	Who is the boy.
	3.	I see the girl go up.
	4.	The book is open.
	5.	The book is here.

*Words introduced to children in both conditions in conjunction with the WLT administered prior to day 1 of the experiment.

Sample Picture Cue Card and corresponding Oral and Written Cue Cards used for Introducing word by the Context Method (reduced in size)

Side 1:

Picture Cue Card for the word dog


John has a pet. His pet
likes to bury bones, chase cats,
and chew slippers. He also barks
and barks and barks when he wants
something. John's pet is a
(p - r)
. And here is a
picture of a dog.

Side 2:

Oral Language Cue Card for the word dog

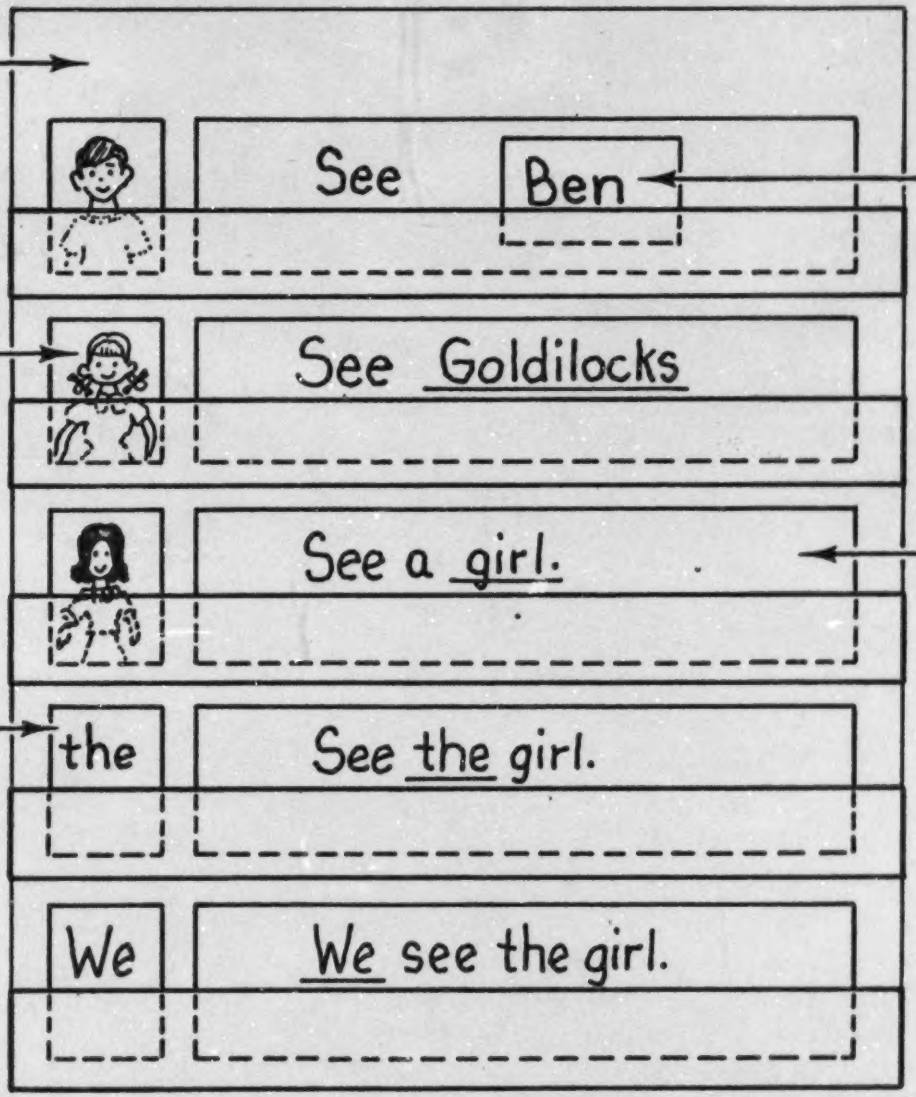
45

See the dog

46

Written Sentence Cue Card for the word dog.

Various Materials Used to Introduce Words by the Context Method



STORIES READ BY CHILDREN FOLLOWING

THE 4th INSTRUCTIONAL SESSION

(Teacher's Copy)

Teacher says: What do we see on this page?
What does it say beneath the picture?

We see someone read.

Teacher says: Who do you see reading?
Who is the lady?
Let's read what it says beneath the picture.

We see mother read a book.

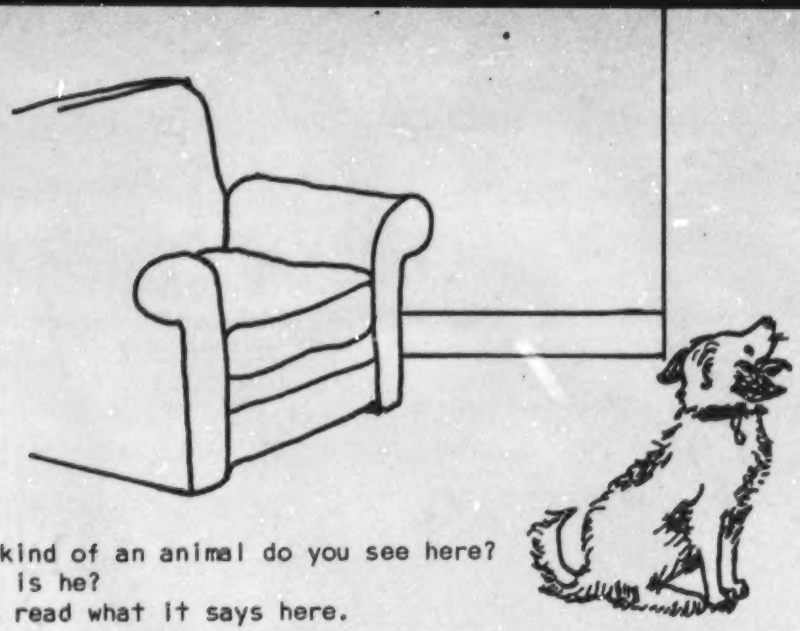
Teacher says: Who do you see here?
What is she doing?
Let's read what it says.

We see a big girl read.

We see a little boy read.

Teacher says: What is the little boy saying?

See Goldilocks and the bear.



Teacher says: What kind of an animal do you see here?
Where is he?
Let's read what it says here.

Ben is a dog.
Ben is in the house.

Teacher says: What does Ben like to do?
What else does he like to do?
Let's read what it says here.

Ben likes to play.

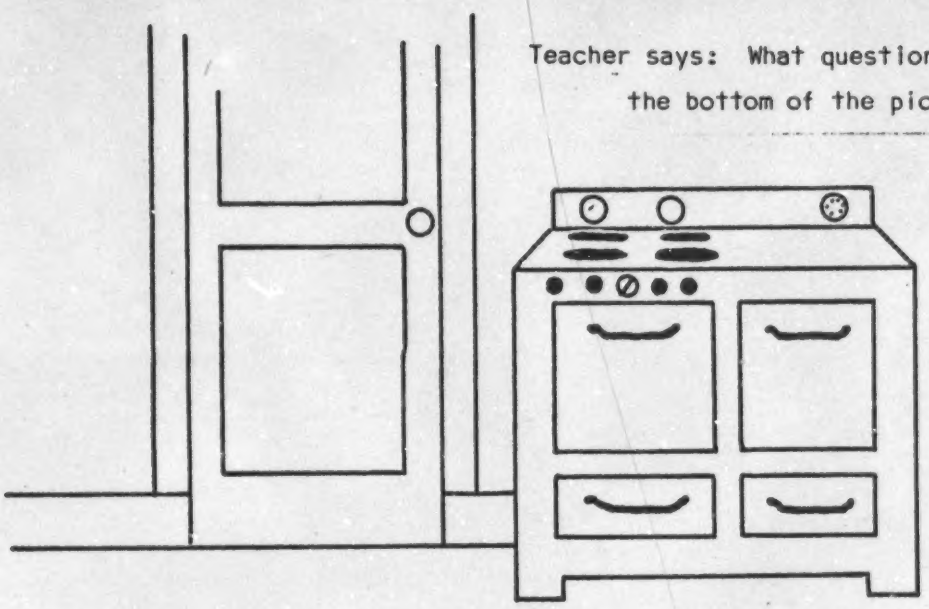
Ben likes to read.

STORIES READ BY CHILDREN FOLLOWING

THE 9th INSTRUCTIONAL SESSION

(Teacher's Copy)

Teacher says: What question is on the bottom of the picture?



Who is here?

Teacher says: Let's read about who is here.

Mother is here

Ben is here.

Mother and Ben are here.

Teacher says: What did mother say?
What did she ask him to do?

Mother said,
Come Ben,
Come and make cookies.

Teacher says: What did they do?

She and Ben make cookies

Teacher says: What do the people see?

People see a trick.

Teacher says: What do they see a pig do here?

People see a pig go up.

Teacher says: What do they see a pig do here?

People see a pig go down.

Teacher says: What did the pig say?

Good-by, good-by said the pig.

APPENDIX C

STANDARDIZED METHODS OF INSTRUCTION AND INSTRUCTIONAL DATA RECORD SHEET

Guidelines for Teaching Sight Vocabulary by the
Distinctive Features Method (DF)

Materials:

Word Cards (3 sets)
Felt Tip Marker
Pocket Chart

A. SEGMENT I: INTRODUCTION OF NEW WORDS

Today we are going to learn some (more) words. First I will show you a word on a card and tell you what it is. You will look at it very carefully and say the word after me. Ready?

Repeat the following for all five words introduced each day:

*(Instructor shows word card) *This is (say word).*
What is the word? (pause -r) *Yes (no) the word is (Say word).* (Place the word card on the pocket chart)

Repeat from *

FOCUS ON DISTINCTIVE FEATURES

LENGTH

(Pointing to the words on the chart) *Look at these words. Which is the longest?* (Pause -r) *Do you remember what the word is?* (Pause, point out) *Yes (no) the longest word is (say word). Now which is the shortest?* (Pause -r) *Do you remember what that word is?* (Point to word) *Yes (no) the shortest word is (say word). Now here is the longest word* (point out) *and that is* (pause -r) *Yes (no) it's (say word). The shortest word* (point out) *is* (pause -r) *Yes (no) it's (say word).*

LETTERS

*Now look at the first word again.** Do you remember what this word is* (pause-r)? *Yes (no) it's (say word). The word (say word) begins with the letter (say letter) and ends with the letter (say letter). What word is this that begins with the letter (say letter) and ends with (say letter)? Yes (no) The word is (say word)* (Point to next word).

Repeat from **

PATTERNS

*Now look at the first word again. *** This is the word* (pause-r). *Yes (no) it's the word (say word). The (say letters in pattern) you see in (say word) are found in many words and most of the time when you see them they say (say sound of pattern). You can hear it in the word (say word),* (pause) *(say sound of pattern)* (pause) *(say word).*

(point to next word)

Repeat from ***

SHAPE

**** *Now let's make a house for the word (say word). We will make a house by drawing a line around the shape of the word. Now look at how (say word) is shaped.* (Instructor explains outline of word in detail.) *Now remember, this word is (say word) and this is its shape.* (Point to next word.) *Do you remember what this word is? Yes (No) it's (say word). Do you think the house for (say word) will be the same as the one(s) before it? Yes (No) it will (not) be different.*

Repeat from ****

B. SEGMENT II: REVIEW OF WORDS

DISCRIMINATION TASK

Now I will show you the new word by itself and ask you to match it with the word on the chart. + (Hold up a word card and point to it.) *The word on this card is (say word). Can you (address child) match it with a word on the chart? Good, you found the word (say word). No, look carefully and find the word (say word).*

Repeat +

RECOGNITION TASK

Now I'm going to say one of the words on the chart and ask one of you to come and pick the card with that word off the chart. Ready?

(Instructor calls each word in random order.)

++ *(Child's name) Can you find the word (say word). Good, (NO) This is the word (say word and point to it).*

Repeat from ++

The group will be dismissed and each child will be called individually for the recall task. The order in which the children are seen will be random.

C. SEGMENT III: RECALL TASK

The child is shown the five new words (and 5 (10) words taught on previous instructional day(s)). Each word is shown in isolation.

Can you read these words for me? (When the correct responses are given say) *Good.* (When an incorrect response is given say) *No, the word is* (Record child's response)

D. ADDITIONAL ACTIVITY

On the fifth and ninth day, directed reading of a selection controlled for previously taught words will take place.

Guidelines for Teaching Sight Vocabulary by the
Context Method (C)

Materials:

Word Cards
Script of Oral Cue
Picture Cards
Sentence Cards
Pocket Chart

A. SEGMENT I: INTRODUCTION OF WORDS

*Today we're going to learn some more words. First, I'm going to tell you a story. * Listen carefully and see if you can tell me the word we're going to learn.*

(Instructor reads script and pauses for children's responses. As children say the word a picture is shown.)

That's right (No) the word is _____, and this is a picture of the word _____. (Show picture.)

(Or if picture is not available) *I don't have a picture of (say word). But . . .*

(instructor shows word)

This is the word (pause -r)

Now I'm going to tell you another story.

(Repeat from * for the next four words.)

REPEAT THE FOLLOWING FOR ALL FIVE WORDS

** *Now I want you to look at the sentence that goes with the (first, second, . . . fifth) picture on the chart. I'll read the sentence, and then I'll ask you to tell me the underlined word. The first (second . . . fifth) sentence says: (Read sentence) The word that is underlined,* (point to it) *is one of the words you are going to learn. Look at it carefully. The underlined word is*

(pause -r) *Yes (no) it's (say word).*

Repeat from **

B. SEGMENT II: REVIEW OF WORDS IN CONTEXT

DISCRIMINATION TASK

Now I will show you the new word by itself and ask you to match it with a word on the chart. I will say the word on the card and give one of you the card. Then you will place it on the same word in the first (second . . . fifth) sentence on the chart.

*** (Point to the word on the card) *The word on the card is (say word). Can you find this word in the first (second . . . fifth) sentence on the chart and put the word on top of that word?* (pause -r) *Good. (No. That's not right. Try the match again.) Now can you read the sentence with the word (say word). Good (No) the sentence reads (read sentence). Let's try another word.*

Repeat from ***

RECOGNITION TASK

Now I'm going to say one of the words on the chart and ask one of you to come and pick the card with that word off the chart. Ready?

(Instructor will randomly call out the words and ask a child to pick the word from the chart). *(Child's name) can you find the word (say word). Good/No. This is the word (say word).*

The group will be dismissed and each child will be called individually for the recall task. The order in which the children are seen will be random.

C. SEGMENT III: RECALL TASK

The child is shown the five new words (and 5 (10) words) taught on previous instructional day(s). Each word is shown in isolation.

Can you read these words for me?

(When correct responses are given, say) *Good.*

(When incorrect responses are given, say) *No, the word is (say word)* (Record child's response)

D. ADDITIONAL ACTIVITY

On the fifth day and ninth day, directed reading of a selection controlled for previously taught words will take place.